

## CLAIMS

- 425/501
1. A mold (10) for heating and enclosing a circular member (23) comprising an annular upper finger mold half (14), an annular a lower finger mold half (16) movable into engagement with said annular upper finger mold half (14) to provide a mold cavity characterized by said annular upper finger mold half (14) having a plurality circumferentially spaced upper fingers (24), said lower finger mold half (16) having a plurality of circumferentially spaced lower fingers (20) movable into meshing engagement with said upper fingers (24) upon closing of said mold (10) by movement of said annual lower finger mold half (16) towards said annular upper finger mold half (16) providing a circular mold cavity for said circular member (23).
  2. A mold according to claim 1 further characterized by said upper fingers (24) and said lower fingers (20) having sloped edges for guiding and compressing said circular member (23) in a central position upon closing of said mold (10).
  3. A mold (10) according to claim 2 further characterized by said upper fingers (24) and said lower fingers (20) having molding surfaces providing a circumferentially continuous molding member surface of said mold (10) with a precise predetermined diameter of said circular member (10) upon closing of said mold (10).
  4. A mold (10) according to claim 3 wherein said circular member (23) is a tire bead having a plurality of wires wrapped in a bead bundle (23) and coated with a resilient rubber-like material further characterized by means for heating said mold (10) for vulcanizing said resilient rubber-like material.
  5. A mold (10) according to claim 3 further characterized by said upper fingers (24) and said lower fingers (20) having extensions (22) extending beyond said molding surfaces for guiding said circular member (23) and providing recesses for receiving said extensions in the closed condition of said mold (10).
  6. A bead curing finger mold (10) characterized by a plurality of circumferentially spaced lower fingers (20) disposed in an annular lower finger mold half (16), a plurality of circumferentially spaced upper fingers (24) disposed in an annular upper finger mold half (14), said annular lower finger mold half (16) being positioned in a generally horizontal position for supporting a bead bundle (23), and said annular upper finger mold half (14) being positioned over said annular lower finger mold half (16) with said lower fingers (20) being interposed between said upper fingers (24) in a closed position of said mold (10) for containing and

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guiding said bead bundle (23) and providing spaces along said lower fingers (20) and said upper fingers (24) to accommodate variations in size of said bead bundle (23).

7. A bead curing finger mold (10) according to claim 6 further characterized by said annular lower finger mold half (16) being raised to close said mold (10) and said annular upper finger mold half (14) having spaced apart spring loaded ejector fingers (27) for retracting upon closing of said mold (10) and for extension upon opening of said mold (10) to transfer said bead bundle (23) to said annular lower finger mold half (16).

8. A bead curing finger mold (10) according to claim 6 further characterized by said annular lower finger mold half (16) having circumferentially spaced apart ejectors (27) and bead holders (22) extending upwardly through said lower annular finger mold half (16) for holding said bead bundle (23) in the lower position of said annular lower finger mold half (16) prior to closing of said mold (10) and ejecting said bead bundle (23) upon lowering of said annular upper finger mold half (14) after vulcanization of said bead bundle (23).

9. A tire bead (23) comprising multiple revolutions of metal wires coated with rubber and wound in a circular configuration to form a bead bundle (23) characterized by said bead bundle (23) being cured in a bead curing finger mold (10) having a plurality of circumferentially spaced lower fingers (20) disposed in an annular lower finger mold half (16) in a generally horizontal lower position for supporting said bead bundle (23), a plurality of circumferentially spaced upper fingers (24) disposed in a generally horizontal annular upper finger mold half (14) positioned over said annular lower finger mold half (16) with said lower fingers (20) interposed between said upper fingers (24) in the closed position of said mold (10) for straightening said wires of said bead bundle (23) and providing spaces along said lower fingers and said upper fingers (20) to accommodate variations in size of said bead bundle (23) during vulcanization of said bead upon application of heat to said bead curing finger mold (10).

10. The tire bead (23) of claim 9 further characterized by said lower fingers (20) and said upper fingers (24) having tapered bead bundle engaging surfaces (38) in converging relationship upon closing movement of said annular upper finger mold half (14) and said annular lower finger mold half (16) for compressing said metal wires during closing of said bead curing finger mold (10).

11. The tire bead bundle (23), according to claim 10 further characterized by said lower fingers (20) and said upper fingers (24) having radially extending surfaces for overlapping said

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bead (23) during closing of said finger mold (10) to limit the closing movement of said lower finger mold half (16) relative to said upper finger mold half (14) and determine the closing movement of the bead curing finger mold (10).

12. A tire bead (23) according to claim 10 wherein the angle of taper of said lower fingers (20) and said upper fingers (24) is from 0 to 45 degrees from a vertical axis of said annular lower finger mold half (16).

13. A tire bead (23) according to claim 12 further characterized by said angle of taper being 15 degrees.

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